IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

ADAPTIX, INC.	§	
	§	
v.	§	**CASE NO. 6:12-cv-22**
	§	
ALCATEL-LUCENT USA, INC. , ET AL.	§	

ADAPTIX, INC.	§	
	§	
v.	§	**CASE NO. 6:12-cv-122**
	§	
ALCATEL-LUCENT USA, INC. , ET AL.	§	

ADAPTIX, INC.	§	
	§	
v.	§	**CASE NO. 6:12-cv-123**
	§	
ALCATEL-LUCENT USA, INC. , ET AL.	§	

ADAPTIX, INC.	§	
	§	
v.	§	**CASE NO. 6:13-cv-49**
	§	
ERICSSON INC., ET AL.	§	

ADAPTIX, INC.	§	
	§	
v.	§	**CASE NO. 6:13-cv-50**
	§	
ERICSSON INC., ET AL.	§	

ADAPTIX, INC.	§	
	§	
v.	§	**CASE NO. 6:12-cv-369**
	§	
T-MOBILE USA, INC.	§	

DEFENDANTS' OBJECTIONS TO MAGISTRATE CRAVEN'S CLAIM CONSTRUCTION ORDER AND MOTION FOR RECONSIDERATION OF THE SAME

Table of Contents

Page

Pursuant to 28 U.S.C. § 636(b)(1)(A) and Federal Rule of Civil Procedure 72(a), Defendants respectfully object to, and request reconsideration of, certain portions of Magistrate Judge Craven's Memorandum Opinion and Order on Claim Construction issued in the above-identified cases on February 26, 2014 (the "Markman Order"). *See e.g.*, Dkt. No. 94.[1] Claim construction orders issued by a magistrate judge are reviewed *de novo*. *Innova Pat. Licensing, LLC v. Alcatel-Lucent Holdings*, 2:10-CV-251, 2012 WL 2958231 at *1 (E.D. Tex. July 19, 2012).

I. TERMS FOR WHICH DEFENDANTS SEEK RECONSIDERATION

A. The '808 Patent

1. "OFDMA traffic channel allocator" (Claim 31)

Court's Construction	Defendants' Construction
logic configured to allocate OFDMA traffic channels	logic configured to allocate OFDMA traffic channels to a subscriber using 2-D spatial signatures of multiple subscribers

Defendants request clarification of the Markman Order to reflect at least the agreed portion of this claim term, as uniformly confirmed by all of the intrinsic evidence, that the "OFDMA traffic channel allocator" recited in Claim 31 of the '808 Patent is "logic configured to allocate OFDMA traffic channels *using at least one* 2-D spatial signature."

As Defendants pointed out in their Responsive Brief at page 50, when arguing for allowance of this claim, the patentee represented that Claim 31 (then application Claim 21) was distinguishable from the prior art because, while the prior art assigned channels based on a *one-dimensional spatial signature*, the *present invention is claimed* based on a *two-dimensional (matrix) spatial signature*:

> FDMA is fundamentally different than the OFDMA protocol. In OFDMA, each subscriber can occupy an arbitrary number of subcarriers of the entire channel bandwidth, while in FDMA, each subscriber is assigned to only one voice channel. In other words, ***each assignment decision in Yun is made based on a one-dimensional spatial signature, while [a] spatial signature in OFDMA is***

[1] For consistency, all citations to the docketed record will be to 13-cv-50, although the Markman Order was filed in each of the above-captioned cases.

> ***two-dimensional (e.g., a matrix or vector).*** Thus, the channel assignment decision of the ***present invention is claimed as based on [a] two-dimensional (matrix) spatial signature***, which is much more difficult than a narrow band case (e.g., TDMA, CDMA, FDMA). Applicants respectfully submit that ***this feature is set forth in the claims since OFDMA channels are already specified in the claims.*** Even so, Applicants have amended claims 11 and 14 and added claims 36, 41, and 43 to explicitly set forth the two-dimensional nature of the spatial signatures.
>
> Therefore, ***in view of this***, Applicants respectfully submit that the present invention as claimed in Claims 1-12, 15, *21* [***issued Claim 31***], 22, and 27 is not obvious in view of the combination of Yun and Alamouti.

Dkt. No. 73, Ex. Y, 7/14/2004 Amendment and Response to Office Action at 15-16.[2] The Examiner responded by allowing Claim 31 to issue.

Adaptix agreed in its Reply Brief that the prosecution history cited above "makes clear that the channel assignment decision is based on a two-dimensional spatial signature . . . ."[3] Dkt. No. 84, at 18. The issue before the Court at the claim construction hearing was whether the recited "OFDMA traffic channel allocator" could allocate traffic channels based on a *single* 2-D spatial signature (the construction Plaintiff had conceded), or whether the intrinsic evidence dictated the use of *multiple* 2-D spatial signatures for each subscriber's allocation (Defendants' construction). Dkt. No. 97 (Markman Hearing Transcript) at 41:9-18; Dkt. No. 73 at 44-45, 50-51. But the Court's Markman Order only considered the patentee's arguments made to obtain allowance of claim 31 over Yun in the construing the meaning of the term "spatial signature," and rejected Defendant's construction because "the two dimensional nature of OFDMA channels are already specified in the claims." Markman Order at 56-57. Because this is the only limitation in claim 31 that refers to OFDMA, Defendants respectfully request clarification of the Markman

[2] All emphasis added unless otherwise noted.

[3] While not contesting that Claim 31 required a two-dimensional spatial signature, Adaptix's Reply Brief argued that the "2-D spatial signature" of Claim 31 need not be a *vector*. Dkt. No. 84 at 18. The Markman Order correctly ruled that the 2-D spatial signature is a two-dimensional matrices, or a sets of vectors . . . ." Markman Order at 58.

Order to reflect at least that the "OFDMA traffic channel allocator" recited in Claim 31 is "logic configured to allocate an OFDMA traffic channel using at least one 2-D spatial signature."[4]

2. "New accessing subscriber spatial signature" and "on-going traffic spatial signature" (Claims 31, 32, and 34)

Court's Construction	Defendants' Construction
"[new / new accessing] subscriber spatial signature"	
No construction necessary apart from the separate constructions of "spatial signature," new subscriber," and "new accessing subscriber," above.	relative complex gains (amplitude and phase patterns) of the new accessing subscriber signals received by a base-station antenna array for each of multiple traffic channels
"on-going traffic spatial signature"	
No construction necessary apart from the separate constructions of "spatial signature" and "subscribers with on-going traffic," above.	relative complex gains (amplitude and phase patterns) of on-going traffic signals received by a base-station antenna array for each of multiple traffic channels

Defendants proposed that the "new accessing subscriber spatial signatures" and the "ongoing subscriber spatial signatures" recited in Claim 31 are 2-D spatial signatures. Defendants based this proposal on: (1) the patentee's explicit disclaimer of one-dimensional spatial signatures during prosecution; (2) the fact that the "new accessing subscriber spatial signatures" and the "ongoing subscriber spatial signatures" are the only spatial signatures explicitly recited in Claim 31; and (3) the fact that the "OFDMA traffic channel allocator" is recited in Claim 31 as being "coupled to" the registers that store these explicitly-named spatial signatures. For the reasons expressed in Defendants' Responsive Brief at pages 44-45 and at the

[4] Defendants proposed that the "OFDMA traffic channel allocator" of independent Claim 31 necessarily requires using 2-D spatial signatures of *multiple* subscribers to allocate a channel to a given subscriber. The Markman Order correctly recognized the traffic channel allocation of Claim 1 requires considering more than one subscriber's spatial signature to allocate each channel, Markman Order, at 78, but erred by not also recognizing that the same must hold true for the traffic channel allocator of Claim 31, Markman Order, at 80-81. For these and reasons in Defendants' Responsive Brief at pages 44-45 and 50-51 and at the hearing (Dkt. 97 at 64:13-66:10), Defendants object to the Court's construction of "OFDMA traffic channel allocator" to the extent it does not require using 2-D spatial signatures of multiple subscribers to allocate a channel to a given subscriber.

hearing (Dkt. 97 at 40:20-43:14), Defendants object to the Markman Order to the extent it construes the spatial signatures recited by Claim 31 as not being 2-D spatial signatures.

3. Spatial Signature Terms[5]

Court's Construction	Defendants' Construction
"spatial signature" (Claims 1, 2, 9, 13, 14, 31, 32, 34, 41)	
vector representing spatial characteristics of a channel	No separate construction needed apart from other terms that include this term
"spatial signature vectors" (Claims 1, 2, 9, 13, 14)	
vectors representing spatial characteristics of channels	No separate construction needed apart from other terms that include this term

The Markman Order construed the terms "spatial signature" and "spatial signature vectors" as a "vector representing spatial characteristics of a channel." Markman Order at 57. The intrinsic and extrinsic evidence, however, shows that the term "spatial signature" has an ordinary meaning, and that ordinary meaning does not encompass any vector representing *any possible spatial characteristics* of a channel. Rather, the plain meaning is far narrower, as Adaptix conceded in its Reply Brief:

> As the '808 patent makes clear, the spatial characteristics of concern are not about a signal received from a subscriber, but rather ***are about the extent to which existing spatial channels between respective subscribers and a basestation interfere***, for purposes of OFDMA channel assignments.

Pl.'s Rep. Br., at 15. The parties therefore agree that the claimed spatial signatures must allow a determination about the extent to which spatial channels between different subscribers and a base station interfere, which is contrary to the broad construction adopted by the Court. As construed by the Court, many "spatial signatures" would ***not*** allow this determination.

[5] Throughout this brief, Defendants discuss representative examples of particular claim terms as they appear in the asserted claims. The full list of related claim terms to which Defendants object and seek reconsideration is listed, for example, in the parties' Joint Claim Construction Chart, Dkt. No. 89, dated February 6, 2014. *See* Claim Term Nos. 7 ("allocat[e/ing] additional clusters to the subscriber"), 10-11("diversity cluster of subcarriers"/"diversity cluster" and "coherence cluster", 14-20 (" Joint Channel Allocation Terms" and "Collaboration Terms"), 35-47 ("Broadband/2-D Spatial Signature Terms"), 51-53, 55 ("Register Terms"), and 60 ("the set of available subchannels for each of available antennas").

The ordinary meaning of spatial signature is the amplitude and phase shift of a signal at one antenna in the array relative to its amplitude and phase shift at another antenna in the array (otherwise referred to as the "base-station array response" or the "relative complex gains between antennas" of the array). This spatial characteristic is what permits determining whether subscribers' channels interfere with one another. *See, e.g.*, '808 Pat. at Figure 1; 5:12-16. The Markman Order makes the legal error of ignoring the ordinary meaning of the term "spatial signature," and misapplying the Federal Circuit's precedent regarding "lexicography." Specifically, the Markman Order incorrectly reasons that the ordinary meaning of this term can be ignored absent evidence that the patentee acted as his own "lexicographer" to define the term to have that meaning. Markman Order at 55.

The doctrine of lexicography merely recognizes that a claim term may be construed to have a meaning *other than* its ordinary meaning, if the patentee "*defines* the specific terms used to describe the invention 'with reasonable clarity, deliberateness, and precision.'" *See, e.g.*, *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). In the absence of such a definition, the Federal Circuit specifically cautions *against* adopting a construction broader than its ordinary meaning: "[b]roadening of the ordinary meaning of a term in the absence of support in the intrinsic record indicating that such a broad meaning was intended violates the principles articulated in [*Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc)]." *Miken Composites, L.L.C. v. Wilson Sporting Goods Co.*, 515 F.3d 1331, 1338 (Fed. Cir. 2008). There is no such support here, placing the Markman Order in direct contradiction to controlling Federal Circuit authority.

a. "Spatial Signature" has an ordinary meaning.

Adaptix did not credibly dispute that the term "spatial signature" has an ordinary meaning that includes a vector that represents the amplitude and phase shift of a signal at one antenna in the array relative to its amplitude and phase shift at another antenna in the array. As explained at pages 32-37 of Defendants' Responsive Brief, the '808 Patent confirms that the particular spatial characteristic provided by a "spatial signature" is the "base station array

response." '808 Pat. at 1:55-57 ("Since the effectiveness of spatial separation depends on the *base-station array responses (often referred to as the spatial signatures)* of all co-slot subscribers . . . ."). The two lead-named inventors on the '808 Patent similarly wrote multiple technical papers equating "spatial signature" with an "array response vector." *See, e.g.*, Dkt. No. 73, Ex. R (Named Inventors Yin and Liu Paper) at 154 ("[T]he response of an M element antenna array to a narrowband source *s(t)* can be written as *y(t)* = . . . = *as(t)*, where . . . a . . is the array response vector (spatial signature).") (italics in original); *Id.*, Ex. S (Named Inventor Yin PhD Thesis) at 27 (" . . . the *array response vector is referred to as the spatial signature*.").[6] The ordinary meaning of "spatial signature" is therefore the base station array response.

Because "base station array response" may not offer the guidance the Court (and, if necessary, a jury) needs to understand the term, however, Defendants' construction elucidates the meaning of a "spatial signature" as the term is consistently used in the intrinsic and extrinsic evidence. Specifically, the literature (intrinsic and extrinsic) *defines* a "spatial signature" or "array response vector" as the amplitude and phase shift of a signal at one antenna in the array relative to its amplitude and phase shift at the first antenna in the array. For example, the intrinsic 1994 Xu Paper, which the '808 Patent cites just before its explanation that the "spatial signature" is the same thing as the "base-station array response," explains that:

> [T]he array response vector to a transmitted signal $s_1(t)$ from a direction of arrival (DOA) θ is a(θ) = [1, $a1(\theta)$, . . . , $aM(\theta)$], where $ai(\theta)$ denotes the amplitude gain and phase shift of the signal at the (i + 1)th antenna in relative to that at the first antenna.

[6] Numerous additional contemporaneous technical papers (extrinsic evidence) confirm that the "spatial signature" is the array response vector. *See, e.g.,* Dkt. No. 73, Ex. O (1998 Xu Paper) at 990 ("A *spatial signature* is *the response vector of a base-station antenna array* to a mobile unit at a certain location."); *Id.*, Ex. P (1995 Jeng and Xu Paper) at 670 ("The *spatial signature* represents the *response of the array antenna* to an emitter at a certain location.") (emphasis added); *Id.*, Ex. Q (1995 Lin and Xu Paper) at 1760 ("In the following, we shall present our experimental results concerning stability of array response vectors (or the so-called *spatial signatures* (SS) for fixed and moving transmitters . . . .") (italics in original); Dkt. No. 84, Ex. 23 (Naguib Paper) at 692 ("To be able to form such beams, we need to estimate the *array response vector*, *or the spatial signature*, of the desired user mobile.").

Dkt. No. 73, Ex. N (1994 Xu Paper) at 1326 (italics in original). Similarly, the extrinsic 1994 Lui and Xu Paper, co-authored by *the lead named inventor Hui Lui* states:

> [T]he array response vector to a transmitted signal $s_1(t)$ from a direction of arrival (DOA) θ is a(θ) = [1, $a1(\theta)$, . . . , $aM(\theta)$], where $ai(\theta)$ is a complex[7] number denoting the amplitude gain and phase shift of the signal at the (i + 1)th antenna in relative to that at the first antenna.

Id. at Ex. T (1994 Lui and Xu Paper) at 800 (italics in original). Consistently, the extrinsic 1998 paper co-authored by Dr. Xu (who also authored the intrinsic 1994 Xu Paper) states:

"Definition of Spatial Signatures . . . [T]he array response vector to a transmitted signal $s_1(t)$ . . . is a complex number denoting the amplitude gain and phase shift of the signal at the (i + 1)th antenna in relative to that at the first antenna."

Id. at Ex. O (1998 Xu Paper) at 954 (italics in original). Consistently, the '808 Patent on this point explains:

> For a system with M antenna elements, the spatial signature can[8] be represented as A_i a_i, where A_i is a fading coefficient of the channel and a_i=[a__1i, a_{13}2i, . . . , a_Mi] is an Mx1 vector that characterizes the relative complex gains between antennas."

'808 Pat. at 5:7-12. Finally, Adaptix's own documents confirm that the base station array response, or "*spatial signature* can be defined as a *complex 'vector' containing amplitudes and phases* of signals received by elements of an antenna array." Dkt. No. 73, Ex. W at ADITC2317322 (Adaptix's Internal Analysis of '808 Patent)) (emphasis added); And Adaptix

---

[7] Amplitude and phase shifts necessarily are expressed as "complex" values, as opposed to scalar values. Dkt. No. 73, Ex. O (1998 Xu Paper) at 954 ("Since the *spatial signature is a vector instead of a scalar*, it is more difficult to characterize its variation.") (emphasis added). This "relative complex gain" between antennas can be expressed either in Cartesian coordinates (in the form A + B*i*) or a polar coordinates (in the form of a magnitude and an angle expressed as degrees or radians). Ex. 1, Adaptix Markman Tutorial, at Slides 35a-35c. Defendants' construction does not seek to exclude either manner of expressing these values.

[8] Adaptix argued in its briefing that the word "can" in this sentence suggests that a spatial signature can take forms other than a vector that represents relative complex gains between antennas, but Adaptix offered no explanation of what other forms that could be. To the contrary, *all* spatial signatures *must at least* include a vector representing the amplitude and phase patterns (relative complex gains) between antennas of the antenna array in order to make that determination.

represented to the ITC that the spatial signatures represent the *relative complex gains across multiple antennas.* Ex. V (Adaptix's Verified ITC Complaint) at ¶ 20 ("The '808 patent achieves this increased throughput by using traffic-channel-allocation logic to allocate OFDMA channels based on the spatial characteristics of the channels (i.e. the *relative complex gains across multiple antennas*."). Therefore, as the intrinsic evidence shows, and as Adaptix has admitted in its court filings, the plain meaning of "spatial signature" is a vector holding amplitude and phase shifts (i.e., complex gains).

b. Patentee Embraced the Ordinary Meaning of "Spatial Signature."

The Markman Order improperly inverts the doctrine of "lexicography." Rather than asking whether the patentee clearly *defined* the term "spatial signature" to have a meaning *other than* its ordinary meaning (the doctrine of "lexicography"), the Markman Order sets aside that "spatial signature" has an ordinary meaning and instead asks whether the patentee clearly defined "spatial signature" in the Patent to have its ordinary meaning. Markman Order at 55-56.

In light of the fact that the patentee at times described the "spatial signature" as a "spatial characteristic," the relevant question regarding "lexicography" is whether the patentee clearly, deliberately, and precisely *defined* the term "spatial signature" to mean something *other* than its plain and ordinary meaning. *Miken Composites, L.L.C. v. Wilson Sporting Goods Co.*, 515 F.3d 1331, 1338 (Fed. Cir. 2008). In this case, the '808 Patent embraces the ordinary meaning of "spatial signature"; it does not redefine the term to be broader than the ordinary meaning.

As the Markman Order correctly points out, the '808 Patent's specification starts by equating the claim term "spatial signature" to the "base-station array response" – the ordinary scope of that term. Markman Order at 50 (first quoted passage). As explained above, the base-station's "array response" does not encompass vectors representing every conceivable spatial characteristic. Rather, it is a vector representing the specific characteristic of the amplitude and phase shift of a signal at one antenna in the array relative to its amplitude and phase shift at the first antenna in the array (otherwise referred to as the "relative complex gains between antennas" of the array).

Defendants object to the construction of "spatial signature" insofar as it embraces "spatial characteristics of a channel" that are not part of the ordinary meaning of the term and do not facilitate the admitted function of the "spatial signature" term. *See* Dkt. No. 84, Pl.'s Rep. Br., at 15 (conceding that "*the spatial characteristics of concern . . . are about the extent to which existing spatial channels between respective subscribers and a basestation interfere*"). A spatial signature is a vector that represents the particular spatial characteristics of a channel that facilitate the specific function of determining the level of interference between different subscribers' spatial channels; and that spatial characteristic is the amplitude and phase shift of a signal at one antenna in the array relative to its amplitude and phase shift at the first antenna in the array (otherwise referred to as the "relative complex gains between antennas" of the array).

4. "2-D spatial signatures," "broadband spatial signatures," and "broadband spatial signature vectors"

Court's Construction	Defendants' Construction
"2-D spatial signatures" (Claims 9, 20, 34, 41)	
two-dimensional matrices, or sets of vectors, that represent spatial characteristics of multiple channels	relative complex gains (amplitude and phase patterns) of a transmitted signal received by an antenna array for each of multiple traffic channels
"2-D spatial signature vectors" / "broadband spatial signature vectors" (Claims 1, 2, 13, 14)	
two-dimensional matrices, or sets of vectors, that represent spatial characteristics of multiple channels	relative complex gains (amplitude and phase patterns) of a transmitted signal received by an antenna array for each of multiple traffic channels
"broadband spatial signature vectors *of the subscribers*" (Claims 1, 13)	
No separate construction required apart from the separate construction of "broadband spatial signature vectors," above.	relative complex gains (amplitude and phase patterns) of subscriber signals received by a base-station antenna array for each of multiple traffic channels

The Markman Order construes "2-D spatial signatures," "broadband spatial signatures," and "broadband spatial signature vectors" as "two-dimensional matrices, or sets of vectors, that represent spatial characteristics of multiple channels." For the same reasons expressed ("spatial signature" terms), Defendants object to the Markman Order's construction of these claim terms

because they are broader than the ordinary meaning of the "spatial signature" term and do not facilitate the admitted function of that term. *See* Dkt. No. 84 (Pl.'s Rep. Br.) at 15 (conceding that "the s*patial characteristics of concern . . . are about the extent to which existing spatial channels between respective subscribers and a basestation interfere*").[9]

5. Register Terms

Court's Construction	Defendants' Construction
"[new / new accessing] subscriber spatial signature register" (Claims 31, 32, 34)	
Plain Meaning	register for storing only "new accessing subscriber spatial signatures"
"on-going traffic spatial signature register" (Claims 31, 32, 34)	
Plain Meaning	register for storing only "on-going traffic spatial signatures"

The '808 Patent's independent Claim 31 requires two distinct register elements and a structural relationship between these registers. The claim requires an "OFDMA traffic channel allocator" that is "coupled to the ***new accessing spatial signature register*** and the ***on-going traffic spatial signature register***." The registers are recited as distinct structural components, each one coupled to the traffic channel allocation logic. Indeed, a construction that would construe the two registers as the same structural element renders the claim nonsensical: "an OFDMA traffic channel allocator coupled to the [register] and to the [same register]."

The Markman Order does recognize Federal Circuit precedent establishing that "[d]istinctly recited limitations are usually interpreted as distinct structures." Markman Order, at

[9] Defendants proposed that the various modifying phrases specifying that the recited spatial signatures were "of a [recited type of] subscriber" specified that the transmitting entity was the recited subscriber, and that the antenna array receiving those signals was at the base station. Defs' Resp. Br. at 28-31, 41-44. Defendants object to the Markman Order to the extent it fails to incorporate Defendants' proposed construction of the "spatial signature" terms as modified by the "of a [recited] subscriber" or "associated with a subscriber." The Markman Order relies solely on attorney argument presented at the Markman hearing to reach a contrary conclusion. Markman Order at 62. Defendants, however, provided evidence contradicting Plaintiff's argument. Defs' Resp. Br., at 41-43. The fact that "multipath effects in both the uplink and the downlink directions may be similar," Markman Order at 62 (quoting Pl.'s Op. Br. at 15), is precisely the reason why a spatial signature *of a subscriber* can be used in those systems to allocate both uplink and downlink channels.

73 (citing *Becton, Dickinson and Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010). And the Order acknowledges that the specification describes these two registers only as two distinct registers. *Id.* (citing '808 Patent at 7:26-35; Figure 6). But the Order erred as a matter of law by not construing these terms and resolving the parties' material dispute as to whether these registers are distinct elements.[10] For these and reasons stated in Defendants briefing at pages 47-49 and at the hearing (Dkt. 97 at 60:5-62:5, 63:4-14), Defendants respectfully request reconsideration and adoption of Defendants' constructions.

B. The '315 Patent

1. Joint Channel Allocation and Collaboration Terms

Court's Construction	Defendants' Construction
"joint OFDMA channel allocation" (Claims 1, 7, 22, 24)	
OFDMA channel allocation to a subscriber based on channel characteristics of multiple subscribers	OFDMA channel allocation to each subscriber based on uplink and downlink channel characteristics of multiple subscribers
"OFDMA traffic channels jointly allocated to a plurality of subscribers through a collaborative OFDMA channel assignment among multiple base stations" (Claim 27)	
Plain Meaning	OFDMA traffic channels allocated as a result of multiple base stations working together to provide OFDMA channel allocation to each subscriber based on uplink and downlink channel characteristics of multiple subscribers on the multiple base stations

The parties and the Magistrate Judge agree that joint channel allocation is based on channel characteristics of multiple subscribers. The Order erred, however, by not finding that a joint channel allocation, in the context of the patent, also requires considering *uplink and downlink* channel characteristics of multiple subscribers. Considering uplink and downlink channel characteristics is an integral part of the "joint" channel allocation solution contemplated by the patent—the specification expressly dictates that in collaborative multi-base station embodiments (which all claims require), exchange of uplink and downlink channel

[10] The Order identifies an extrinsic dictionary definition, but offers no explanation of how that definition supports either side's proposed construction. Markman Order, at 74.

characteristics of multiple subscribers *is required to enable* the multi-base station joint channel allocation. *See* '315 Pat. at 11:22-37. Defendants also showed that their construction does not violate the doctrine of claim differentiation because while certain claims recite *specific types* of uplink and downlink characteristics, none recite uplink and downlink characteristics in the abstract as presented in Defendants' proposed construction. The Markman Order's determination is based solely on the fact that some claims recite specific types of uplink and downlink characteristics, while others do not mention uplink and downlink. Markman Order at 25. This mere fact alone cannot override the specification's express requirement that uplink and downlink characteristics are a required part of joint channel allocation in collaborative multi-base station embodiments (and that the exchange of uplink and downlink characteristics is required for the base stations to *collaborate*). For these and reasons stated in Defendants' responsive brief at 18-26 and at the hearing (Dkt. 97 at 110:12-118:9), Defendants request reconsideration and adoption of Defendants' constructions for these terms.

C. The '172 Patent

1. "diversity cluster of subcarriers" / "diversity cluster" (Claims 1, 4, 5, 10, 13) and "coherence cluster" (Claims 1, 7, 13)

Court's Construction	Defendants' Construction
"coherence cluster": logical unit of multiple physical subcarriers that are relatively close together, as compared to the subcarriers of a diversity cluster	**"coherence cluster"**: defined logical unit of multiple physical subcarriers, where the physical subcarriers are mapped to the logical unit so that they are consecutive or close together
"diversity cluster": logical unit of multiple physical subcarriers that are relatively far apart, as compared to the subcarriers of a coherence cluster	**"diversity cluster"**: defined logical unit of multiple physical subcarriers, where the physical subcarriers are mapped to the logical unit so that at least some of the subcarriers are non-consecutive with and spread far apart from all other subcarriers of the logical unit

Defendants request clarification of the Markman Order to at least require that the physical subcarriers of each cluster be chosen for the cluster ***because of*** their relative spectral locations, a finding mandated by all of the intrinsic evidence. *See* Defs. Resp. Br. at 7-8. The Markman Order did not address Defendants' arguments that the particular subcarriers for those

clusters must be chosen, or mapped, ***because*** of their respective spectral properties. *See* Markman Order, at 15-17. The '172 patent presupposes, however, that the base station can *choose* one type or the other as befitting a particular situation. *See, e.g.* '172 Patent, at 16:10-63 (describing "intelligent *selection* between diversity clusters and coherence clusters"). The base station therefore must be able to distinguish between the two types of clusters. If clusters were, for example, formed by random mappings of subcarriers, various clusters may meet the Court's definitions even though the base station cannot distinguish between them and did not define any cluster ***because of*** the particular arrangement of its subcarriers. *See* Markman Transcript, 104:23-107:3. For these and other reasons stated at pages 7-8 of Defendants' Responsive Brief, Defendants request that the Court clarify the Markman Order to at least require that each respective cluster type is a "logical unit of multiple physical subcarriers that are mapped because they are [relatively close together, as compared to the subcarriers of a diversity cluster / relatively far apart, as compared to the subcarriers of a coherence cluster]."

Defendants also object to the Markman Order to the extent that it found that diversity cluster and coherence cluster do not require the particular spectral properties reflected in Defendants' proposed construction. The only basis the Court provided for rejecting Defendants' constructions was that they "arguably" excluded a preferred embodiment. Markman Order, at 17.[11] The Court reasoned that in a preferred embodiment, the subcarriers of a coherence cluster need ***not*** be close together but could actually be spread far apart so long as they are within a coherence bandwidth.[12] *Id.* To the contrary, a coherence cluster's subcarriers are, *by definition*,

[11] The Court also rejected Defendants' inclusion of the term "defined" in their proposed constructions, but correctly determined that the term "unit" already required "that the cluster must exist before it can be allocated." Markman Order, at 84. Defendants do not object to not including the term "defined" to the extent the Court agrees "that the cluster must exist before it can be allocated."

[12] The Court's reliance on the "coherence bandwidth" embodiment to modify the scope of the cluster terms is misplaced because this term is vague and would not provide guidance to one of ordinary skill in the art. The Court did, however, find that "coherent bandwidth" was not indefinite and construed it to mean "bandwidth within which the channel response remains roughly the same." *Id.* at 22. But the Court itself acknowledged that the phrase "channel

either consecutive or close, while a diversity cluster's subcarriers are, *by definition*, *spread far apart*. '172 Pat. at 14:27-31. The preferred embodiment in question merely imposes an *additional* requirement that the *closeness* of the *coherence* cluster's subcarriers be *within a coherence bandwidth*, or that the *far-ness* of the *diversity* cluster's subcarriers be *outside a coherence bandwidth*. *Id.* at 14:31-41; 15:3-11. The Court's reasoning is thus inconsistent with the specification's disclosure. For these and reasons stated at pages 6-11 of their briefing and at the hearing (Dkt. 97 at 88:3-95:15, 102:13-103:19, 104:9-108:7), the Court erred by not adopting Defendants' proposed constructions.

D. The '283 Patent

1. "allocat[e/ing] additional clusters to the subscriber" (Claims 46, 91, 92, 119)

Court's Construction	Defendants' Construction
Plain Meaning	allocat[e/ing] more clusters to the subscriber beyond those currently allocated to the subscriber

Defendants object to the Court's rejection of Defendant's construction in favor of "plain meaning." Adaptix argued at the hearing that if a person is given $5 and then goes out and spends the $5, he can then be given an "additional" $5. Dkt. No. 97, at 86:9-13. This analogy is inapplicable to the '283 Patent. A wireless subscriber cannot "spend" allocated clusters and then be given "more." The base station either allocates clusters to a subscriber, or the base station makes those clusters available to someone else. An allocation and subsequent re-allocation of clusters to the same subscriber thus results in "new" or "updated" resources being allocated, not "additional." For these reasons and reasons stated in Defendants responsive brief at 14-15 and at the hearing (Dkt. No. 97 at 78:7-83:23), the Court erred by not resolving the dispute between the parties and accepting Defendants' proposed construction. *See O2 Micro Int'l v. Beyond Innovation Tech.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008).

E. The '851 Patent

---

response [that] is roughly the same" is "vague and would potentially require construction." Markman Order at 15.

1. "the set of available subchannels for each of available antennas" (Claims 20, 28)

Court's Construction	Defendants' Construction
Plain meaning	for each of multiple available antennas, an identification of available subchannels on that antenna

The Court declined to construe this term, finding that it has its "plain meaning." A finding of "plain meaning" does not resolve the dispute between the parties because Adaptix has rejected that plain meaning as demonstrated by its infringement contentions, which show that Adaptix is reading "for each of multiple available antennas" out of the claim. For example, Adaptix does not believe that, as the Court correctly held with respect to the "selecting" term of this patent, "the subchannels do not stand in isolation but rather correspond to antennas." Markman Order, at 104. Adaptix believes the opposite to be true—that the subchannels may stand in isolation and need not correspond to antennas. Defendants sought a construction for this term that recognized the fact that the claimed subchannels correspond to antennas. In particular, as Defendants argued on pages 52-53 of their Responsive Brief, this term requires an *identification* of each available subchannel corresponding to each antenna. For these and reasons stated in Defendants' Responsive Brief and at the hearing (Dkt. No. 97 at 124:11-127:16), Defendants' construction should be adopted.

II. CONCLUSION

For the foregoing reasons, Defendants respectfully request that this Court sustain Defendants' objections with respect to the claim terms listed above adopt Defendants' proposed claim constructions for the same.

Dated: March 12, 2014

Respectfully submitted,

By */s/ Stephen Swedlow*

David A. Nelson
Stephen Swedlow (*pro hac vice*)
Thomas Cushing (*pro hac vice*)
Robyn Bowland (*pro hac vice*)
Marc Kaplan (*pro hac vice*)
QUINN EMANUEL URQUHART & SULLIVAN
500 West Madison St, Suite 2450
Chicago, Illinois 60661
Telephone: (312) 705-7400
Fax: (312) 705-7499
davenelson@quinnemanuel.com
stephenswedlow@quinnemanuel.com
thomascushing@quinnemanuel.com
robynbowland@quinnemanuel.com
marckaplan@quinnemanuel.com

Michael E. Jones
POTTER MINTON PC
110 North College, Suite 500
PO Box 359
Tyler, Texas 75710-0359
Telephone: (903) 597-8311
Fax: (903) 593-0846
mikejones@potterminton.com

ATTORNEYS FOR DEFENDANTS ALCATEL-LUCENT USA, INC. and AT&T MOBILITY LLC

/s/ Geoffrey M. Godfrey
Mark D. Flanagan
Robert M. Galvin
Geoffrey M. Godfrey
WILMER CUTLER PICKERING HALE & DORR LLP
950 Page Mill Road
Palo Alto, CA 94304
Tel: (650) 858-6000
Fax: (650) 858-6100
Mark.Flanagan@wilmerhale.com
Robert.Galvin@wilmerhale.com

Geoff.Godfrey@wilmerhale.com

Michael E. Jones
Texas State Bar No. 10929400
POTTER MINTON, P.C.
110 North College, Suite 500
Tyler, TX 75710-0359
Tel: (903) 597-8311
mikejones@potterminton.com

ATTORNEYS FOR CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

/s/ Mark W. McGrory
Mark W. McGrory
Lawrence A. Rouse
ROUSE HENDRICKS GERMAN MAY PC
1201 Walnut Street
Suite 2000
Kansas City, MO 64106
Tel: (816) 471-7711
Fax: (816) 471-2221

Michael E. Jones
State Bar No. 10929400
mikejones@potterminton.com
POTTER MINTON
A Professional Corporation
110 N. College, Suite 500
Tyler, Texas 75702
Tel: (903) 597-8311
Fax: (903) 593-0846

ATTORNEYS FOR DEFENDANTS SPRINT SPECTRUM L.P.

CERTIFICATE OF SERVICE

I certify that on the 12th day of March, 2014, all counsel of record were served with a copy of this document via the Court's electronic case filing system.

/s/ Marc L. Kaplan
Marc L. Kaplan